

CLAIMS:

1. A lithographic projection apparatus comprising:
 - a support structure for supporting a patterning device, the patterning device serving to pattern a projection beam according to a desired pattern;
 - a substrate table for holding a substrate;
 - a projection system for projecting the patterned beam onto a target portion of the substrate; and
 - a positioning system for positioning an object, selected from the group consisting of the support structure and the substrate table, said positioning system having a long stroke module and a short stroke module in series and a control system for controlling the long stroke and short stroke modules to move the positioned object along a desired course at desired speeds;wherein said control system is adapted to control said long and short stroke modules to apply a desired acceleration to said object by controlling said short stroke module to apply said desired acceleration to said object and to control said long stroke module to apply a smaller acceleration.
2. Apparatus according to claim 1 wherein said control system is adapted to control said object to move at a substantially constant scanning velocity during a scanned exposure.
3. Apparatus according to claim 2 wherein said control system is adapted to control said short stroke module so that said object reaches said constant scanning velocity at or shortly before the beginning of said scanned exposure and to control said long stroke module such that a driven end thereof reaches said scanning speed after the object has reached said scanning speed.
4. Apparatus according to claim 2 wherein said control system is adapted to control said long and short stroke modules such that said driven object starts an exposure cycle at a first position at which it has a speed of zero in the direction parallel to said scanning

velocity and said short stroke module is proximate an extreme of its range of movement in the direction opposite to said scanning velocity.

5. Apparatus according to claim 4 wherein said control system is adapted to control said long and short stroke modules such that said short stroke module reaches a position proximate an extreme of its range of movement in the direction of said scanning velocity when said long stroke module reaches said scanning velocity.

6. Apparatus according to claim 2 wherein said control system is adapted to control said long stroke module to begin deceleration before the end of said scanned object begins to decelerate.

7. Apparatus according to claim 2 wherein said control system is adapted to control said long and short stroke modules such that said driver object ends an exposure cycle at a second position at which it has a speed of zero in the direction parallel to said scanning velocity and said short stroke module is proximate an extreme of its range of movement in the direction of said scanning velocity.

8. A device manufacturing method comprising:
projecting a patterned beam of radiation onto a target portion of the layer of radiation-sensitive material on a substrate; and
positioning at least one of the substrate and a patterning device used to pattern the beam with a positioning system comprising a long stroke and a short stroke module in series; and
accelerating the substrate or the patterning device by applying a higher acceleration with the sort stroke module than with the long stroke module.

9. A machine readable medium comprising machine executable instructions for performing a method comprising:
projecting a patterned beam of radiation onto a target portion of the layer of radiation-sensitive material on a substrate; and
positioning at least one of the substrate and a patterning device used to pattern the

beam with a positioning system comprising a long stroke and a short stroke module in series; and

accelerating the substrate or the patterning device by applying a higher acceleration with the sort stroke module than with the long stroke module.